

AMERICAN UNIVERSITY OF ARMENIA

**A STUDY OF INFORMATION AND COMMUNICATION TECHNOLOGIES
AND GOOD GOVERNANCE IN ARMENIA**

**A MASTER'S ESSAY SUBMITTED TO
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Abstract

The main purpose of this research is to explore and analyze the current situation with application of Information and Communication Technologies (ICT) in governance and its impact in promotion of democracy in Armenia.

The paper starts with discussing different definitions of e-governance and good governance. Then it presents two examples of the contribution of Information and Communication Technologies to local governance in Latin America and India.

The paper next reviews the potential role of ICT in transforming governance in Armenia. Then the paper reviews UNDP Country Office in Armenia Country Cooperation Framework for Armenia from 1997 to 2004 time period, introducing the program area of good governance with its two sub-programs: (a) development of information and communication technologies as a medium for better governance and (b) capacity building of key governance institutions and consolidation of democracy.

The final part of the paper focuses on findings of the interviews, results of the survey among the students as well as the analysis of websites and management information systems of the selected ministries.

The paper finally presents a set of recommendation to government on further development of ICT tools in governance to strengthen impact on the process of democratization.

Introduction

*“15 Recognizing the principles of universal and non-discriminatory access to ICTs for all nations, the need to take into account the level of social and economic development of each country, and respecting the development-oriented aspects of Information Society, **we underscore** that ICTs are effective tools to promote peace, security, and stability, to enhance E-democracy, social cohesion, good governance and the rule of law, at national, regional, and international levels.”* **TUNIS COMMITMENT. World Summit on the Information Society** (www.itu.int).

The transforming power of information and communication technologies (ICTs), and predominantly the Internet, continues to reconstruct various sectors of society, including business, science, politics, education, health, environmental conservation etc. etc. The emergence of an Internet-connected overall society has added a totally new aspect to the meaning of the letter “e”. Information and communication technologies (ICT) have changed literary each sector of society and has created concepts such as electronic business (e-business), electronic banking (e-banking), electronic commerce (e-commerce), online or distance learning etc. The field of government is not exception from this wave of change. ICT created electronic governance (e-governance) and electronic government (e-government). There is a need to explore these two concepts, which have been used loosely and interchangeably to refer to just about all forms of technology in government, ranging from the simple computerization of elementary tasks, to the outright transformation of communities into e-societies.

Nowadays people are increasingly demanding more transparency and accountability from governments, more power both at the national and local level, more independence to express their demands and more attention to citizens’ voices. Citizen participation is one of the most important features of local governance where community leaders are effectively concerned and

engaged in the satisfaction of community needs. ICTs open up new opportunities for citizens awareness and civic participation.

Currently, hundreds of communication satellites circle the globe and the Internet has started an information revolution. As such, the Internet, personal computers, mobile telecommunications can be productively applied to tackle an infinite number of economic and social challenges. Thus, the creation of Internet can be seen as a new platform for communication and as a source of information, which now competes with mass media.

ICT has transformed people's lives and facilitated communications across the world. It has entered in every sphere including governance and policy-making as well. The use of ICT is likely to revitalize political relations by allowing direct citizen participation in government, by avoiding mediations and by thus optimizing the representative process and expanding participative democracy.

One of the greatest challenges put on the agenda by technological innovation is the narrowing of the digital gap. If technology has provided huge advances, it has also emphasized the distance between those who are and those who are not yet prepared to use it. The "network society" or "information society" has been praised by optimists as enhancing the chances for growth and development through ICT.

Governments, as public institutions and guardians of democracy, need to play a positive role in the online world. Deepening citizens' participation in decision-making is very important to make clear that governments at all levels can both accommodate the will of their people and more effectively meet public challenges.

Armenian society as everywhere else benefits from the opportunities brought in by ICT. This is also evident in the field of public administration. More and more central government agencies,

local governments deploy these technologies in their everyday life for management of their internal operations and for communicating with the external world.

There is a great importance of preparing the society to these new forms of e-governance, convert them from exotic, unusual tools into conventional and routine. The introduction of e-government in society requires strong political will to see through the transformation process it implies to government both in its internal operations as well as with regards to its interaction with civil society.

Research Questions

1. How the ICT technologies are used in central government agencies and local governments?
2. What is the portion of population that uses ICTs to collect information about government?
3. How much constituents are prepared to communicate with government officials online?
4. Is ICT a decisive step in the process of public information sharing and in the citizen-government-citizen interaction?
5. How the government agencies are prepared to share information and gauge citizens' satisfaction with their services through the use of ICT?
6. Is there a linkage between ICT and the improvement of good governance?
7. How accessible is Internet in different regions of Armenia?
8. How the citizens blogs published on government sites are considered in subsequent decision-making?

Methodology

The methodological framework of this Master's essay includes face to face, semi-structural interviews with the chiefs of the staff of selected ministries of Republic of Armenia (Ministry of Foreign Affairs, Ministry of Diaspora, Ministry of Territorial Administration) and the National Assembly. For surveys addressing complex issues it is preferable to communicate with respondents and seek for exchange of opinions. Thus, open-ended questions were asked. Specifically, websites and management information systems of the above mentioned ministries as well as websites of local government (municipalities of Yerevan, Sisian, Alaverdi, Noyemberyan, Yeghegnadzor) were explored on their ability to ensure transparency, provision of adequate information and capacity to provide online services. In addition, the use of ICT in improving efficiency of internal operations was explored.

The second part of this research dealt with the users of government websites. The cross-sectional survey of universities was carried out. The sampled population included students from different departments of 4 Yerevan State Universities: Yerevan State University, Yerevan State Pedagogical University after Khachatur Abovyan, Yerevan State Linguistic University after Valery Brusov and American University of Armenia. Through random sampling a sample of 80 students was selected. The quantitative data was inputted into SPSS program. Sampling size was 80, meaning 20 students from each university. A questionnaire was developed, which included open ended, as well as closed-ended questions to measure respondents' attitude, knowledge, evaluation of the above mentioned topic. Original data were provided with interpretation.

Experts and bloggers in this field were also interviewed in order to have more comprehensive information about citizens' participation and their engagement processes in different blogs and forums, where they can get the information they seek, as well as express their ideas and opinions.

Review of the Literature

Number of studies has been conducted in different countries to evaluate the principles of e-governance. Here is the brief review of studies conducted by some the authors.

The e-government concept was practically unknown a decade ago. Now, however, ICTs have advanced so far to give the idea of e-government implementation. The term, as a research topic, has grown dramatically and has been addressed by many scholars. Even though research on this topic has extended significantly, Heeks and Bailur (2007) point out to a poor state of the research, "...viewed as the offspring of information systems and public administration – accused at times of philosophical, theoretical, methodological, and practical shortcomings – and shows all signs of having inherited the expected 'generic' profile". However, ICTs are considered to have a remarkable administrative potential which help to create a network for service delivery, efficiency and effectiveness, decentralization, transparency, and accountability. Electronic government covers all these functions and refers to the use of ICT in providing the citizens an improved access to information related to public administrations.

Richard Heeks (2001) has studied the consequences of information and communication technologies and its major contributions to the accomplishment of good governance through the study called "Understanding e-Governance for Development", where the three main contributions of e-governance are researched that are improving government processes (e-

administration), connecting citizens (e-citizens and e-services) and building external interactions (e-society). Case studies are used to show that e-governance is a current and also future reality for developing countries.

A cross-national multilingual online survey was conducted focused on issues related to the European Knowledge Society and its impacts on living and working conditions by the year 2015. A Delphi report “European Knowledge Society Foresight” was submitted by Rafael Popper (2003) to European Foundation for the Improvement of Living and Working Conditions. It was concluded in the report that one of the core contributors in building KS (Knowledge Society) would be extensive use of ICT in e-governance.

Government maintains at least five types of relationships with both internal and external parties: G2C (government-to-citizen), G2B (government-to-business), G2G (government-to-government), G2E (government-to-employee); and C2C (citizen-to-citizen) (Stiglitz, *et. al.*, 2002; Csetenyi, 2000; Heeks, 2001). Among these five, the most extensively discussed is the relationship between government and citizens (G2C). The relationship between government and citizens can be split into two dimensions: the relationship with citizens as participating members of a democracy, and the relationship with citizens as consumers of government goods and services (Aichhlozer & Schmutzer, 2000; Heeks, 2001).

Conceptualization

For the purpose of this study good governance has the following meaning according to UNDP: "The exercise of economic, political and administrative authority to manage a country's affairs at all levels. It comprises of the mechanisms, processes and institutions, through which

citizens and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their differences." (Greea et al., 2004)

The core principle of good governance are citizen-participation, rule of law, transparency, responsiveness, equity and inclusiveness, effectiveness, efficiency, accountability and strategic vision and consensus orientation. It assures that corruption is minimized, the views of minorities are taken into account and that the voices of the most vulnerable in society are heard in decision-making and implementation.

For the purpose of the study e-governance is conceptualized in the following way: "E-governance means application of electronic means in the interaction between government and citizens, both ways, government and business both ways, internal government operation. E-governance implies e-democracy, where all forms of interactions between electorate and the elected are performed electronically." (Prabhu, 2006)

For the purpose of the study e-government means: "E-government, as distinguished from e-governance, comprises pragmatic application and usage of the most innovative technologies in computer and communication technologies, including Internet technologies, for delivering efficient and cost effective services, and information and knowledge to the citizens being governed, thereby realizing the vast potential of the government to serve the citizens." (Prabhu, 2006)

Electronic government is the process of transformation of the relationships of the government between its constituents and between its organs through the use of the tools of Information and Communication Technologies (ICTs). The aim is to bring about enhanced access, transparency, accountability, and efficiency in the delivery of government information and services (Satyanarayana, 2004).

ICT and Good Governance: International Experience

In order to show how the use of ICT has contributed to the good governance and later on to compare with the case of Armenia, it's also necessary to discuss the international experiences.

For that purpose two cases studies are taken as a sample, where ICT has had great success in almost all the spheres of governance.

ICTs and Good Governance: The Contribution of Information and Communication Technologies to Local Governance in Latin America

A survey was conducted by Carlos Batista (2003) on the conditions for the use of ICT in five countries in Latin America: Brazil, Uruguay, Peru, Ecuador and Mexico. In several municipalities, mayors, leaders and authorities were interviewed and many local organizations visited. Both the factors determining good governance at the local level and their relatedness to ICT were examined in order to increase knowledge on this relationship.

At the very first stage some important steps were introduced by the communities of the above mentioned Latin America countries for implementing good governance with the help of ICT. The introduction of computers to public management was the first step for the modernization of mainly the internal services of the municipal executive bodies, i.e. the automation of administrative processes, which then facilitated the organization of information by means of a

classification process. The second step was the implementation of electronic government, i.e., the rendering of public and governmental services to society via electronic media. The third step was the use of ICT for good governance.

Different strategies were suggested by the heads of municipalities to reach the good governance via ICT. One of the core issues was the introduction of a training program for the population with the help of mobile units (trucks or vans) with instructors and equipments in different boroughs of the city. This would solve the problem of mobilizing people and would stimulate public participation at a lower cost. The next step was to computerize the municipal executive, including an Internet site informing the public on events, courses etc., and to publish a bulletin online, making the municipal budget and other information transparent to the public.

At the federal level, an important initiative to reduce the “digital deficit” of the population was the creation of the Fund for the Universalization of Telecommunication Services (*FUST*). The idea was to democratize telecommunication through installing telephone lines and Internet in public schools, post offices and libraries, in addition to subsidizing the telephone bills of these institutions. Resources for this Fund are obtained by charging a tax of 1% of the revenues of the telephone companies that operate the Brazilian Telephone System without altering the final prices paid by consumers. Another suggestion was the introduction of electronic balloting process which would diminish the chances of frauds and increase the transparency of the electoral process. The use of electronic ballots was widely debated by political actors (society, the three branches of government, media, universities, NGOs) before the old electoral procedure was replaced. The Brazilian experience with electronic voting machines was internationally recognized. The United Nations signed an agreement with the Brazilian government that will facilitate the installation of the same technology in other countries that ask for electoral

assistance. One of the facts that impressed UN most was the fact that 115 million Brazilians voted electronically without any accusations of fraud.

Some final conclusions can be discussed and presented as guidelines to improve sites according to the research findings. ICT use has improved aspects of governance with respect to transparency in the above mentioned countries of Latin America. Another progress was the improvement of local governance and the greater interaction between citizens and the legislatures, via Web (Batista, 2003).

ICT and Good Governance: A Study of Indian Environment

The government in India has been continuously endeavoring to provide citizen services in a better manner. There have been several successful initiatives and many noteworthy projects undertaken in various states of India.

A few studies have been conducted with respect to Indian perspective. Koneru, Indira (2007) in her study is of the view that E-governance as a technology-enabled Public Information Services system aids not only in reengineering the structures but also in reorganizing the procedures and processes for speedy delivery of services. The demand for e-governance is growing in consequence of government's ineptness to meet the citizens' needs in a timely, cost-effective and corruption-free manner. Moreover, Political, Economic, Social and Technological (PEST) changes and developments ushered e-Governance as a solution to the decrease role of Governments in delivering goods and services rapidly. Connectivity, community participation, and content are the prerequisites for designing effectual G2C or C2G systems, in addition to capital, committed leadership and components evaluation (Kalsi, at. al., 2009).

In countries like India people are poor and infrastructures are not up to the mark. Under such condition it becomes very difficult to provide government services to the people. The policy-makers in India justify the adoption and expansion of e-governance on the grounds that it costs less, reduces waste, promotes transparency, eliminates corruption, and guarantees a better future for citizens (Bharti, 2005).

Indian government has taken major initiatives to setup institutions for making policy, control and account deployment of e-Governance which will provide effective and efficient services.

One of the most important initiatives undertaken by the central government was the Information Technology Act (2000), which is to regulate cyberspace and define offences and penalties related to information technology (IT) such as tampering with computer source documents. Another step was Freedom of Information Bill that required all public authorities to maintain information and records via ICT, and appoint Public Information Officers to assist citizens in gaining access to such information. Centre for Electronic Governance was established to promote IT and e-governance in the country to identify the appropriate forms of ICT necessary for better service delivery, to conduct training for generating it awareness among government officials and to help state governments in implementing policies and reforms based on best e-governance practices.

Thus, we can say that e-Governance is the key to the “Good Governance” for the developing countries like India to minimize corruption, provides efficient and effective or quality services to their citizens.

The Use of ICT as Tools for institutional Transformation in Armenia

In order to get a complete perception of the implementation of ICT for transforming governance in transition countries such as Armenia, a brief analysis of the period of Soviet Union should be overlooked. This period was characterized by a centralized political culture. Thus, there was minimal government to citizen (G2C) interaction and hardly any effective political participation or a demand for it. However, all of this changed after the collapse of the Soviet Union in 1991 (Ramaswamy, 2010).

The post-independence period of Armenia started with the disruption of institutional stability which resulted in a weakening of existing bureaucratic procedures. The provision of clear information to public, and moreover the public's right to it, are heretofore newly explored concepts. Before we can identify areas suitable for e-governance implementation, it is vital to ensure that a clearly defined and understandable procedure for reform is in place (Ramaswamy, 2010).

Armenia as a landlocked country somehow isolated from the global economy stands to gain enormously from the use of information technology (IT). A number of recommendations were suggested by McKinsey & Co. (2003) in "Armenia 2020" strategy paper based on an assessment of the software and IT services sector in Armenia, as well a range of successes from various case studies, including from India, Israel and Ireland. One of those recommendations was focused on the role of government as a leader in fulfilling "information society" objectives, mainly as a lead user and facilitator of IT services in the public sector.

IT industry was proclaimed as a priority sector of Armenian economy by the Government of the Republic of Armenia back in December 28, 2000. Afterwards in 2001 ROA Government asserted the "RA Concept Paper for the Development of the Industry of Information Technologies" and Information Technologies Development Support Council chaired by the

Prime-Minister was established by the Order No ՆՂ -896 of the President of the Republic of Armenia July 20, 2001. To create preconditions for bringing Armenia's IT industry along with international standards Enterprise Incubator Fund was established by ROA Government Decree N 1165 of November 27 under the credit agreement signed with the World Bank. A number of legal acts were adopted, namely RA Law NՉO-40 on Electronic Document and Electronic Digital Signature adopted in December 14, 2004 and RA Law NՉO-176 on Electronic Communication adopted in July 8, 2005. As a result of cooperation with RA Ministry of Economy the RA Statistical Service has developed and started to use the national statistical monthly report form for Information Technologies (form No 1-IT).

According to adopted standards of UN's annual e-readiness report the information society is characterized by electronic web services provided in the framework of e-government – Service Oriented Architecture (SOA). As it is mentioned in e-readiness reports, in 2004, 2005 and 2008 Armenia ranked after 100 countries of the world. In terms of electronic readiness we have relevantly good position by human capital indicator (57th place in the world), which characterizes the literacy of population and its involvement in educational system. According to this indicator, the level of education of Republic of Armenia is high.

UNDP Country Office in Armenia First Country Cooperation Framework for Armenia (1997-1999)

A United Nations presence was established in Armenia in 1992 to respond to the on-going humanitarian emergency opening in Yerevan of an Office of the United Nations High Commissioner for Refugees (UNHCR) and an office for the United Nations Department of Public Information. The first Country Cooperation Framework (CCF) for Armenia constitutes

the basis for UNDP cooperation with the Government for the period 1997-1999. It was proposed by the Government proposed to concentrate UNDP support under this thematic area in the directions such as democracy, governance and participation.

The Government and UNDP proposed to support the process of democratization, governance and popular participation through the Modernization of the State for the Administration of Democratic Governance initiatives linked to Presidency/Prime-Minister's office, the Ministry of Foreign Affairs, the National Assembly and the Supreme Auditing Institution under it, regional and municipal administrations. The UNDP National Information Infrastructure for Sustainable Development/Internet Project was utilized to support the development of the emerging National Information Management Infrastructure facilitating the consolidation of existing networking projects into coordinated and sustained national effort, provision of enhanced awareness, capacity-building and education opportunities derived from access to the information resources on the UNDP Sustainable Development Network (SDN) and Internet.

The first Country Cooperation Framework (CCF) for Armenia covered the period 1997-1999. Since 1998, positive changes have occurred in the overall development situation of the country. Armenia has made certain progress in the area of governance towards the establishment and improvement of democratic mechanisms involving the State, the civil society, and the private sector and is in the stage of developing its ICT policy, the optimal use of which would help the Government address many governance issues from a considerably more effective perspective. A strong emphasis was placed on connecting the country through the means of modern information technology to the global arena. UNDP supported the establishment of a centre with free public Internet access coupled with the first training facility in the region for Internet users. By 2000, more than 6,000 users had registered and were using Freenet email addresses and more than

1,000 websites had been created, in all 11 regions of the country. In 2000, UNDP Armenia shifted its focus from providing Internet access to the Armenian people, to using the Internet in developing democracy. As a tool for building e-democracy, in 2001 this shift in focus resulted in the creation of online forums, www.forum.am , on various topics such as human rights and political parties. As a result, all the large political parties participated in these discussions, presenting their own drafts of the constitution and receiving comments from other parties as well as the general public.

The second CCF sets forth the strategy and areas of cooperation with UNDP in 2000-2004 and is harmonized with the cycles of other key United Nations funds and programmes resident in the country.

The Government proposed two major program areas for the second CCF: good governance and poverty reduction and post-conflict rehabilitation.

The program area of good governance in its turn has two sub-programs: (a) development of information and communication technologies (ICT) as a medium for better governance and (b) capacity building of key governance institutions and consolidation of democracy.

UNDP is not a new player in ICT and has already supported the process of sustainable reforms in Armenia through assistance to the establishment of a national information infrastructure to ensure adequate access to information resources by the Government, the academic, educational and business communities, NGOs and civil groups in this way pursuing two goals: Develop a strategy for the best use of ICT as a sustainable human development tool and to facilitate the political and economic reform process. The strategy will be agreed upon in co-operation with the World Bank, the European Union, the OSCE, and the Open Society Institute. The results of the second cooperation gave the following results: 1. More efficient

public administration and civil service, particularly emanating from improved connectivity between the central, and decentralized administrations, 2. Enhanced transparency and participation of the civil society in the community life owing to facilitated electronic access to public documents, 3. Fostered economic growth as a result of electronic access to economic information and investment opportunities through the creation, in partnership with the WB, of Internet Development Gateway for Armenia, 4. Improved co-ordination of official development assistance to Armenia owing to the creation of an open database on international co-operation. In late 2002, UNDP Armenia implemented the National e-Governance System for Territorial Administration of Armenia, a network of e-Governance portals with corresponding databases hosted by regional administrations, and a central portal hosted by the Ministry of Territorial Administration (MTA).

Evaluation Report of UNDP Armenia ICT- for-Development Program

UNDP and Swiss Development Cooperation (SDC) have initiated the independent evaluation of UNDP projects in the area of ICT-for-Development (ICTD), one of which is co-financed by the Swiss Government.

UNDP has accomplished these purposes by developing and implementing a second generation of ICTD projects focused on the demonstration of convincing results of how ICTs can be used for public good by expanding affordable access to the Internet through Free net creating the Armenian language Web domain, integrating e-governance into the public sector management at central and regional levels through e-GSTA and e-Visa, advocating enabling Information Society and telecommunication policies, developing and encouraging peer-to-peer

online networking among professionals and population groups, expanding the use of the Armenian language on the Internet and widen the Armenian Web content.

The main UNDP projects supporting these objectives have been the following:

1. *ARM/02/012 “e-Governance System for Territorial Administration”* (implemented by the Ministry of Territorial Administration, 2002-2004), 2. *ARM/01/001 “Support to Information Society and Democratic Governance”* (implemented by the National Academy of Sciences, 2001-2004), 3. *ARM/99/005 “International Assistance Database for Armenia – IADA”* (implemented by the Prime Minister’s Office, 1999-2000).

The gathered evidence reflects positive changes that have occurred in certain areas of Information Society and democratic governance. This validates the accomplishment of the accelerated progress toward e-governance. These areas are: expanded choices for citizens and businesses to access and use ICTs, improved conditions in the public sector management at central and regional levels to add new value to public services and make administrative authorities more open through the use of e-government and e-democracy instruments, enhanced capacity, knowledge, competencies, increased awareness in the government, professional and civil society groups, and the private sectors about the public benefit of ICTs, improved image of Armenia as a country using ICTs to modernize itself.

The contribution has been substantial making regional governance practices more democratic and the ICT-enabled citizen-centered public services they started to provide since 2001. As a result, at present Armenia is among the leaders in the CIS in introducing the full-featured e-governance system - e-GSTA at regional level and probably also at central.

In 2001, an ICT Master Strategy was developed with the technical assistance provided by the World Bank and USAID.

At the time of the evaluation the only official visionary document available was the Concept Paper on the Development of Information Technologies in the Republic of Armenia approved by the Government of Armenia (protocol of the cabinet session No 18 of March 3 2001). In 2001 in accordance with the Presidential Order No 896 of July 2001, the IT Development Supporting Council (ITDSC) was created to establish permanent communication between the government, IT industry and interested civil society groups.

Yet, some policy-related problems pertaining to the IT industry and broader issues of Information Society have been successfully resolved. It demonstrates a good potential of this advisory body. Nevertheless, the key cabinet-level position of Chief Information Officer (CIO) recommended in ICT Master Strategy has not been created and state policies remain undefined.

The introduction of e-government in Armenia has been developing rather spontaneously, without coordination from the state. Similarly, the progress should be attributed to initiatives of select donors, ICT professionals, civil society and select public authorities.

The most noticeable changes are associated with: expanded choices for citizens and businesses to access and use ICTs in their personal advancement and economic competitiveness, increased awareness within the governmental authorities, professional and civil society groups, and the private sectors about the potential of ICTs as a public benefit available to all, improved image of Armenia as a country using ICTs to modernize itself.

According to the project proposal UNDP envisaged to establish public access points in the buildings of nine regional territorial administration bodies. The visited territorial administration bodies have been equipped with local area networks connecting the officials' workstations with the network and web servers. Relevant training has been carried out for the officials responsible

for the generation of the web content including training in general administration of information resources.

Establishment of e-government systems at the territorial administration bodies has substantially improved the accessibility of information about the activities of the administration, as well as public access to regulations issued by regional authorities. Unlike many official web sites the sites of the regional administration bodies contain more practical content such as application forms, regulations, contacts and other information that citizens and businesses need in their everyday life. This has also improved the communication between the Ministry of Territorial Administration and regional territorial administration bodies as well as communication with relevant local-self administration bodies (communities). Ability to use ICT applications varies from place to place, but some local self-administration bodies have achieved great results in application of ICT in community administration including the use of ICTs in communication with the public. One of the best examples is the community of Hrazdan city where ICTs applications are used in utilization and planning of communal services, tax collection, budget planning and inquiry processing.

Concept of Internet Development in Armenia

Armenian Internet being a part of the global Internet is developing on the principles formulated by the Internet Governance Forum (IGF), which was created several years ago on World Summit on the Information Society (WSIS) meeting. IGF is a body where governments, business and society can discuss problems resulting in the development of Internet governance principles and plans.

Expert estimation shows that the Internet traffic is divided between Yerevan and marzes in the proportion 80 - 20% in 2009 (www.armstat.am). It is obvious that such a division should be diminished. Accessibility is not a problem in Armenia now. Cornet (Comstar) and ICON companies are actively promoting WiMAX technology. Beeline, Vivacell, Orange telecommunication companies are promoting fiber connection to the regions of Armenia. However, this is not enough. The continuation of this process is “Internet for Seniors”. A good example of an approach to the aged people is the initiative of the Australian government (www.necseniors.net) to provide free access to computers, broadband services and training to seniors.

Due to the recent technology development it can be stated that there is no accessibility problem in Armenia but the affordability. Because of the low living standards of the population it cannot afford even minimal Internet access prices. To make it possible it is necessary to establish regional Internet community centers in regions of Armenia where population can access Internet free of charge (Mkrtumyan, 2008).

Results/Findings

Interviews with experts

For the purpose of this research the chiefs of staff of selected ministries (Ministry of Foreign Affairs, Ministry of Diaspora, Ministry of Finance, Ministry of Justice), governmental agencies and other experts were interviewed. A separate questionnaire was formed with open-ended questions (Appendix C). Thus, the answers of the formed questionnaire are the summarized below:

According to interviewees, Information and Communication Technologies are relatively new phenomenon in Armenia. There has been a great progress in the usage of ICT since the 90's and as a developing country the ICT is nowadays widely used in the governmental agencies both for inner interactions of the employees as well as for government-citizen interaction. One of the most important electronic communication systems that the Armenian government agencies introduced is the Mulberry system. Mulberry is commercial software mainly for e-mail communication. The correspondence with citizens is coordinated by Mulberry electronic data management system (EDMS). Besides communication with citizens, the system also allows the government units to communicate with each other in a simplified way. Transfer of the government internal communication into an electronic format will significantly reduce paperwork and make the state administration more efficient and productive. The new system will change the work of the state administration and make it more transparent for those contacting it. The system is currently operating in 25 of 44 government executive bodies, and it is scheduled to install the system in the rest ones till late 2011. The expenses for the program installation and management, including retraining of about 4,000 state civil servants and acquisition of a software license made up about \$700,000 over 4 years. The program was supported by the World Bank and EU (www.armeniandiaspora.com).

However, not all the government agencies use Mulberry. For example the National Assembly has its own Intranet system and many local governments use a different system developed by an NGO called Information Systems Development and Training Center (www.infosys.am), as well as Yerevan Freedom of Information Center.

In spite of the fact that interviewees were representatives from Ministries as well from different NGOs, all of them stated that the objectives of ICT were not only a source of

information but also a chance for citizens to participate in a decision-making process via forums and blogs. Citizen participation and the interaction with citizens via websites is one of their main priorities as transparency can be obtained this way. The ministry websites as well as the NGO websites have forums and blogs where citizens can easily write a letter to a government official. The system is very simple. They can even follow who their letters go to. Concerning the Ministry websites, citizens are given a 12 digit password to be able to post a letter on the website. The letters are responded in 5 to 7 days period. All the letters are looked through without any discrimination; remarks are often taken into consideration. Any remark concerning the job conducted by the Minister is tried to be redone. NGOs are also concerned with the letters of the citizens as they work only for people and what they do is done to make the life of Armenians easier and better.

ICT has the potential to transform the relationship between citizens and public services, and how public services are delivered – but only if it is clear what the ICT is being used for, and appropriate ICT is used to achieve these objectives. Organizations need more information about how best to use ICT to improve choice and efficiency, and to create high-quality services. If ICT is to be used effectively, it needs to be clear not only how ICT links to public service objectives, but also what ICT is most appropriate. This requires understanding the customer and their needs and expectations, and understanding how these can be managed in light of concerns about efficiency.

One of the main priorities of all the agencies and ministries of the sample is the improvement of public services via their websites. Different answers were given to this question, however all of them agreed upon one main priority, which is the transparency of the websites which in its turn would improve the quality of the provided public services.

However, ICT is the best way to avoid crowding in front of the doors of the agencies or ministries, it is low-cost, more transparent, time effective. The appropriate bodies as well as public services are available round the clock. Citizens can find the appropriate information they need 24 hours a day and without weekends, without standing at the doors of the officials and waiting for their turn to come.

One of the advantages of ICT usage in government agencies and organizations is the provision of the chance to citizens of the RA to interact with the high-ranked officials through writing letters on the websites. All of the interviewees think that it is a better way of communication than writing a conventional written.

In case of ICT usage, the scenario is something different. The users are provided with the chance to watch the process of e-mail delivery, i.e. who the letter goes to, who responds it, in what are the deadlines for responding. Concerning the letter response time, it differs from ministry to organization.

The future of ICT in Armenian government system seems to be very promising according to interviewees. We can see a huge progress in comparison with the previous years. As it was mentioned by one of the experts different experts from European countries have said that in comparison with other developing countries the role of ICT in good governance in Armenia is much better and especially in the field of local self-governance. Another important factor stated by the experts was level of Internet access in the marzes and communities of Armenia.

One of the core issues is widely spreading ICT among the citizens. Many of the Armenians especially in villages are computer illiterate and don't even know how to access Internet not to speak about sending an e-mail to a public agency. This is the core factor for further development of e-governance in Armenia to be addressed. However, there were other opinions as well. First

the employees of government agencies should be retrained and be prepared for using ICT in their agencies to interact among each other, to be able to handle all the paperwork electronically.

Thus, all of the experts positively answered to this question, stating that ICT can really lead to forming a democratic state and that in the nearest future ICT will be the core priority of good governance in Armenia.

Some of the experts were optimistic and others rather pessimistic towards the fact that in the nearest future citizens of the RA will choose government websites to get public services. It was mentioned that it would be great to have such system in Armenia in the nearest future. Even if 5% of the citizens is eager or can participate in the process connected with ICT, for this 5% everything must be done. It was also mentioned that it will be one of the best solutions to avoid standing in lines for hours. Websites can be considered as all day receptions. One of the experts stated that he as well as the other members of the organization hope that the citizens will be ready to use websites and be actively involved in it. The respondent thought that Internet availability in Armenia made had some progress in comparison with the previous years. But in any case not in all regions people know how to use Internet and have access to computers, not to say about using government websites to obtain the necessary information. Concerning the fact whether people in the nearest future will be willing to pay taxes online, or obtain certificates and permits, she answered that maybe in marzes citizens will be able to use Internet and have access to websites and find the necessary information there; however in villages the Internet availability is not as good as in communities.

According to some ideas the steps that are needed to promote the use of ICT in the field of governance is the promotion of ICT tools via television, or print out fliers with corresponding information. There are 915 municipalities in Armenia and, of course, not all of them use ICT and

have their local government websites. However, it would be great to have websites for at least most of the municipalities, where the citizens can get information about their mayors, councils, municipal ordinances passed, budget, as well as the current activities. This is the first and the most important step for citizens to have access to government websites, which can follow the promotion of e-governance among the users. Another idea was that NGOs together with the appropriate government agencies should educate people and give the simple knowledge of Internet usage skills. Their cooperation is very important as joint use of their resources will ensure successful implementation of this mission hoping that in the nearest future the citizen-government face to face interaction will be decreased to the minimum. Others suggested developing training courses especially for citizens who are above 50 and are computer illiterate as well as training courses for people living in villages, where people don't know how to use computers and having a computer at home is considered to be something extraordinary.

Almost all the interviewees didn't pay much importance to social networks. Some of them have a profile on Facebook or Twitter, others aren't interested in social networks at all stating that there is no time for social networks.

According to the interviewees in the nearest future citizens' blogs published on such social networks will not be much important as these networks don't have permanent character and will be closed some day. They also stated that such social networks are mainly used for other purposes, mainly for communication, chatting.

Sampling of the Websites of the Government Agencies of the RA

The second part of the research deals with the analysis of the selected websites giving a brief description of the government websites of the RA and discussing the minimal base for the E-governance requirements. Since 2003 after the adoption of the Armenian FOI law the FOI Center

jointly with its partner NGOs, has initiated an FOI Annual Award Ceremony for the best government web site. “Freedom of Information Center of Armenia” non-governmental organization (FOICA) was founded on June 1st, 2001. The main task of FOICA is to defend the people’s constitutional right to have access to information. The nominees are selected by an Independent Jury represented by local and international organizations’ members, journalists, and scientists in the field. The Jury sums up the results of the monitoring conducted by the FOI Center and their own experience and names the best and the worst web site. The criteria that have been adopted by FOICA connected with the quality government as well as agency websites are the following: Does the website of the state/local self-government body publish the information in compliance with the Law "on Freedom of Information"? Is the contact information of the person responsible for providing information published (name, position, phone number, e-mail address)? Is there a proper form for information enquiries on the website of state/local government? Whether it is possible to send an electronic enquiry for information? Does the agency/government respond to electronic enquiries/is information provided electronically? Are the agencies, which do not have a website, advised to create a website and make their information available online? (www.foi.am)

Thus, according to the results of 2010 the best official web site in terms of freedom of information has been awarded to the RA Government official web site (www.e-gov.am). Positive Award in 2009 for a state institution/agency with the best e-governance system has been awarded to the Ministry of Territorial Administration.

The sample of the research includes 11 websites (Table 1) that are currently available:

Table 1. HTTP Address

	Official Web sites	Hyper Text Transfer Protocol (HTTP) Address
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1.	President of the Republic of Armenia	http://www.president.am/
2.	Government of the Republic of Armenia	http://www.e-gov.am/
3.	National Assembly	http://www.parliament.am/
4.	Ministry of Foreign Affairs	http://www.mfa.am/
5.	Ministry of Diaspora	http://www.mindiaspora.am/
6.	Ministry of Territorial Administration	http://www.mta.gov.am/
7.	Municipality of Yerevan	http://www.yerevan.am
8.	Municipality of Sisian	http://sisian.am
9.	Municipality of Yeghegnadzor	http://yeghegnadzor.am
10.	Municipality of Alaverdi	http://alaverdi.am/
11.	Municipality of Noyemberyan	http://noyemberyan.am

Taking into account that not all the municipalities have websites at present, only 5 municipalities are included in the research on the basis of random selection. Also the sample includes governmental bodies such as ministries of the RA as well RA National Assembly, RA President as important political institutions that have official websites.

The data on the websites were collected taking into consideration the following criteria: General View, User Friendliness, Available Document Content, and E-Readiness. Each of the above mentioned criteria is analyzed based on a set of questions. The questionnaire developed by the United Nations Division for Public Economics and Public Administration and the American Society for Public Administration was used (Benchmarking E-Government, 2001). The data has been selected according to the mentioned sections, displayed in separate tables and served as the qualitative base of further analysis.

The first part of analysis is demonstrated in Table 2, which gives a *General Overview* of the websites. As demonstrated in the table, RA National Assembly is the legislative branch of

Armenia and RA Presidency, RA Government, ministries of Foreign Affairs, Diaspora and Territorial Administration represent the executive bodies, and rest of the observed websites are local governments. It also should be mentioned that the websites of Sisian and Yeghegnadzor municipalities are created by Information Systems Development and Training Center (www.infosys.am). Concerning the user's ability to printout or download laws, bills, and ordinances it was found out that all 11 websites provide such possibility.

Table 2. General Overview

	Branch of the government (central or local)	Agency name	Website	Does the agency have official website?	Can user download laws, bills, ordinances etc.
Presidency	Executive	RA Presidency	Official Site	Yes	Yes
Government	Executive	The Government of the RA	Official Site	Yes	Yes
NA	Legislative	RA National Assembly	Official Site	Yes	Yes
Ministry of Foreign Affairs	Executive	Ministry of Foreign Affairs	Official Site	Yes	Yes
Ministry of Diaspora	Executive	Ministry of Diaspora	Official Site	Yes	Yes
Ministry of Territorial Administration	Executive	Ministry of Territorial Administration	Official Site	Yes	Yes
Yerevan Municipality	Local gov.	Municipality of Yerevan	Official Site	Yes	Yes
Sisian Municipality	Local gov.	Municipality of Sisian	Official Site	Yes	Yes
Yeghegnadzor Municipality	Local gov.	Municipality of Yeghegnadzor	Official Site	Yes	Yes
Alaverdi Municipality	Local gov.	Municipality of Alaverdi	Official Site	Yes	Yes
Noyemberyan Municipality	Local gov.	Municipality of Noyemberyan	Official Site	Yes	Yes

The second part of analysis includes Content of the websites (Table 3). It asks whether the user can have a full picture of the activities of the agency. The questions have been developed to measure the content. Questions are about the availability and non-availability of the following criteria: introduction, links to the services, links to related governmental ministries, agencies, departments, and the map of the website. As stated in table 3 all 11 websites have overall introduction to the website. Regarding the availability of links to the services 5 out of 11 have links to the services. As for the availability of links to related governmental ministries, agencies, again 5 out of 11 provide the links. The last criteria is availability of the website map and 6 out of 11 conform to the above mentioned feature.

Table 3. Content (Can a visitor have a full picture of activities of the agency?)

	Introduction	Links to the services	Links to related governmental ministries, agencies	Site index or map
RA Presidency	Available	Not Available	Not Available	Available
RA Government	Available	Not Available	Available	Not Available
RA National Assembly	Available	Not Available	Available	Available
Ministry Foreign Affairs	Available	Available	Available	Not Available
Ministry of Diaspora	Available	Not Available	Not Available	Available
Ministry of Territorial Administration	Available	Available	Available	Not Available
Yerevan Municipality	Available	Available	Available	Available
Sisian Municipality	Available	Available	Not Available	Not Available
Yeghegnadzor Municipality	Available	Available	Not Available	Not Available
Alaverdi Municipality	Available	Not Available	Not Available	Available
Noyemberyan Municipality	Available	Not Available	Not Available	Not Available

The third part of analysis is User-Friendliness (see Table 4). It consists of 3 subparts that are Contact Information, Design of User Friendliness and Site Design with corresponding measures. The first subpart, which is Contact Information, consists of 2 measures that are the name of contact individual(s) and telephone numbers, addresses, etc. The data show that Yerevan Municipality doesn't provide the names of contact individuals and 4 out of 11 do not provide telephone numbers, addresses, etc. Design of User-Friendliness includes the measure Contact us. Thus, the data is the following: 5 out of 11 don't have this feature. And, finally, Site Design consists of 2 measures that are the search feature and multilingualism. The results are the following: all of the websites do provide this feature. Concerning multilingualism only websites of Noyemberyan and Alaverdi municipalities don't possess this feature.

Table 4. User-Friendliness

	Name of contact individual(s)	Telephone numbers, addresses, etc.	Contact us	Does the site offer a search feature?	Is the site multilingual? Number of languages other than national
RA Presidency	Available	Available	Available	Yes	Yes-2
RA Government	Available	Available	Not Available	Yes	Yes-2
RA National Assembly	Available	Available	Not Available	Yes	Yes-3
Ministry Foreign Affairs	Available	Available	Not Available	Yes	Yes-2
Ministry of Diaspora	Available	Not Available	Available	Yes	Yes-3
Ministry of Territorial Administration	Available	Available	Available	Yes	Yes-2
Yerevan Municipality	Not Available	Not Available	Available	Yes	Yes-2
Sisian Municipality	Available	Not Available	Not Available	Yes	Yes-2
Yeghegnadzor Municipality	Available	Not Available	Not Available	Yes	Yes-2
Alaverdi Municipality	Available	Available	Available	Yes	No
Noyemberyan Municipality	Available	Available	Available	Yes	No

And, finally, the last table (Table 5) represents E-Readiness, asking whether the website can offer specific online services. It includes 5 measures that are participation in discussion forums, ability to apply or pay a utility bill, or obtain certificates, download or print forms or applications, send a letter to corresponding agency, and follow the processing of the letter.

Thus, the data of Table 5 show that only 3 websites out of 11 the user can participate in discussion forum. For the measure that asks whether the site offers the user an online service to apply or pay a utility bill, the data reveal that none of the 11 websites of the sample provides such service. Concerning the user's ability to download or print forms or applications, the data show that 7 out of 11 websites the user can not download or print forms of applications, while the remaining 4 provide such opportunity. As for the last 2 measures the data show the following. 7 out of 11 websites provide the user with the opportunity to write a letter to a corresponding body and follow the processing of the letter, 2 out of 11 websites don't provide such opportunity, and, finally, 2 websites allow the user to write a letter to corresponding body, however the user can't follow the processing of the letter.

Table 5. E-Readiness

	Can user participate in a discussion forum?	Apply/pay a utility bill, or obtain certificates	Download or print forms or applications	Send a letter to corresponding agency	Follow the processing of the letter
RA Presidency	No	No	Not Available	Yes	No
RA Government	No	No	Not Available	Yes	Yes
RA National Assembly	No	No	Not Available	Yes	Yes
Ministry Foreign Affairs	No	No	Available	Yes	Yes
Ministry of Diaspora	No	No	Not Available	Yes	Yes
Ministry of Territorial Administration	Yes	No	Available	Yes	Yes
Yerevan Municipality	No	No	Not Available	Yes	No
Sisian Municipality	Yes	No	Available	Yes	Yes

Yeghegnadzor Municipality	Yes	No	Available	Yes	Yes
Alaverdi Municipality	No	No	Not Available	No	No
Noyemberyan Municipality	No	No	Not Available	No	No

Survey Among the Students

The purpose of this survey was to explore the level of knowledge and the level of satisfaction of students about the about application of information and communication technologies (ICT) to enhance citizens' access to information and delivery of government services in Armenia.

Findings

There were no respondents that lack access to personal computer. 100 percent of the respondents answered yes to the first question (see Table 1). To find out whether the respondents accessed government websites, a corresponding question was asked. Out of 80 respondents 47 percent answered yes and 52 answered no (see Table 2). And, to find out how many minutes they

refer to the government websites during a week, the most popular answer was 60 minutes a week, which was given by 55 percent of the respondents (see Table 3). However, 53 percent of the respondents agreed with the fact that Armenian government websites are of high quality (see Table 5) and other 87 percent disagreed that access to information on government websites increases government accountability to citizens (see Table 13). One of the most interesting findings was the fact that 75 percent of the respondents, though being eager to take part in participating of adopting government decisions via electronic forums, disagreed with the fact that writing an electronic letter to a government member will make changes in government decision-making process (see Table 18).

To measure one main reason explaining why they refer to those websites, a corresponding question was asked and the answers were then recorded into 4 groups, namely:

1. to be updated about legislative acts,
2. to get daily news, information,
3. to use as a additional source of information for my studies, and,
4. other (including 'don't know') answers.

Out of 80 respondents 55 percent answered that they access to get daily news, information (see Table 4).

Analysis

The above-presented data provide a description of the overall E-governance level of eleven government websites. The data were collected according to four criteria which are General, Content, User-Friendliness and E-Readiness.

According to the data for the General criteria that refer to the general scene of the agency's homepage it can be said that almost all the government agencies maintain official website/homepage. However, not all the eleven web sites provide the user with the opportunity to download or printout laws, bills, regulations or ordinances, as the municipalities of Alaverdi and Noyemberyan websites don't maintain this stage of General criteria.

Further the data refers to the Content of the websites. It should be mentioned that the discrepancy among different government agencies does not occur in this stage when it comes to the content. The measure for the Content refers to the question of whether the visitor can have a full picture of the activities of the agency. Here the data is not inspiring to answer the proposed question positively. The picture is perfect when it comes to the availability of a simple overall introduction. However, the same cannot be said about the availability of the links of the agency within the content. The data supports the assumption that majority of the observed websites fail to provide links to the services, links to related governmental ministries and agencies as well as the site index or map. Thus, it becomes apparent that there is no overall difference among agencies, which states that it is consistent across all the measures of the above mentioned criteria.

The data on the third part User-Friendliness, that concerns the availability of contact information, supports the assumption that the user is provided minimum communication means in terms of contact information. The data shows that the majority of the websites do provide E-mail, telephone numbers, addresses. As for the availability of Contact Us feature the observed

websites show a failure. Concerning the fact whether the site is multilingual, the data show that two out of eleven websites are multilingual. Thus, the data displays that most of the agencies meet the User-Friendliness criteria. However, it should be also stated that there is no such agency that meets all the features of the User-Friendliness.

And, finally when it comes to the last part, which is E-Readiness, the picture of Armenian governmental agencies supports the assumption that the evaluation of Armenian governmental agencies from the perspective of E-Readiness seems to be much more discouraging. The data supports that almost all the agencies fail to meet the provision of services. For the on-line services such as user's participation in discussion, apply/pay a utility bill, or obtain certificates, download or print forms or applications, the data shows that majority of the agencies do not offer such services. However, concerning sending a letter to corresponding agency and following the processing of the letter the picture is different. Two websites allow the user to write a letter, however the user can't track the processing of the letter.

Thus, after collecting the data, it has become apparent that Armenian official government websites seem to have the minimum required base of E-governance web presence, though still some gaps exist. Thus, on the overall level the data seems to be encouraging rather than discouraging.

Concerning the next part of the methodological framework of the Essay it was found out from the interview with the experts that the current situation of E-Governance in Armenia has some developments towards the use of ICT in governmental system of Armenia. The first thing to be mentioned is the introduction of www.e-gov.am, created by the initiative of the Government to supplement the Armenian Government official website for ensuring maximum

transparency. Annual award ceremony of governmental websites by Freedom of Information Center of Armenia as a result of which in 2010 www.e-gov.am got best government website.

The purpose of this survey was also to measure respondents' attitude, knowledge, evaluation of ICT to enhance citizens' access to information and delivery of government services in Armenia. First, it is worth mentioning, that there were no respondents that don't have access to Personal Computer, which shows that the youth in Yerevan is actively using computers and Internet which is a step towards getting involved in ICTs and being able to take part in the government decision-making process. Another surprising data was that 47% of the students of the sample access government websites, which is a very encouraging fact, meaning that students not only spend their time in social networks but also are interested in governmental decisions, as well as news and other official information. It was found out that out of 80 respondents 55 percent answered they access to get daily news, information. Concerning the respondents' attitudes towards changes in government decision-making process through their participation via Internet forums, most of all disagreed with the fact that writing an electronic letter to a government member will make changes in decisions of the RA Government. Students don't think that they can make changes, that their voices will be heard, which is one of the main measures of democracy and good governance.

Conclusions

The purpose of this research was to study and evaluate the current situation with application of ICT in governance in Armenia. The study has specifically focused on characteristics of Armenian governmental websites, extent of usage of these sites by students of Armenian state

universities as well as by experts in various fields, which look for government information. The essay supports the idea that ICTs could serve as necessary tools for increasing citizen's participation in government decision-making process and enhance the efficiency of the work of central and local governments.

The paper was based on the research questions the answers to which were given throughout the research. Thus, it was found out that via Mulberry system the ICT technologies are used in central government agencies which is one of the most important electronic communication systems that the Armenian government agencies has introduced. Mulberry is commercial software mainly for e-mail communication. Concerning the portion of population that uses ICTs to collect information about government, it was found out that about 47% of the sample that in this research represented the students of Yerevan state universities, access government websites to collect information about government as well as to get updated information about the laws, government decrees. Another research question concerned the proportion of constituents prepared to communicate with government officials online. Again it was found out that about 90% of the respondents would write an online letter to government officials and take part in decision-making process. Another important question was whether ICT is a decisive step in the process of public information sharing and in the citizen-government-citizen interaction. The data showed that the ICT is nowadays widely used in the governmental agencies both for internal communications of the employees as well as for government-citizen interaction. The citizens can get information about their mayors, councils, municipal ordinances passed, budget, as well as the current activities which is an important factor for public awareness. To the question of how the government agencies are prepared to share information and gauge citizens' satisfaction with their services through the use of ICT it was found out that government websites play a leading role

here. Citizen participation and interaction with citizens via websites is one of the government priorities to obtain transparency. The ministry websites as well as the NGO websites have forums and blogs where citizens can easily write a letter to a government official. Concerning the research question whether there is a linkage between ICT and the improvement of good governance, it was found out that good governance is defined as an interaction process between government and society. Good governance is safeguarded as long as governmental decisions are transparent, individuals organize themselves, express their priorities and demands to government offices and governments takes them into account. ICT integration generates a democratization factor. ICT represents a decisive step in the process of the sharing of public information and in the citizen-government-citizen interaction. To the question of how accessible is Internet in different regions of Armenia, the proportion is rather discouraging. According to National Statistical Service of the Republic of Armenia estimation the Internet traffic is divided between Yerevan and marzes in the proportion 80 - 20% which is a very disappointing fact and the situation should be improved.

Thus, E-Governance aims to promote personal development at the citizen level by creating an informed society, and also works to transform the old logic of administration by introducing new forms of data and information management. Conditions of increased transparency are introduced with the use of ICT, making it possible to provide usual services to the public in electronic format in addition to traditional procedures, thus ensuring better access to public information and services. This helps to reduce basis for corruption by decreasing opportunities for government employees to misuse their authority in providing public information.

The information society implies wide accessibility of information and dynamic interaction between citizens and government and decision-making by using information technologies. Thus,

the Armenian government in its capacity of the primary decision maker should be in a position to take the lead in creating information society by introducing E-governance and supporting E-democracy. Assessment of the government websites shows that more and more central government agencies and local governments deploy ICTs in their day-to-day work for management of their internal operations and for communicating with the external world.

The data collected from the interviews, results of the survey among the students as well as the study of government websites clearly show that there is a certain progress toward E-governance in Armenia, which is encouraging. Consequently some recommendations are presented in the essay to develop E-government in Armenia.

Recommendations

While analyzing the possible impact of ICT tools in governance on transforming the nature of relationship between the government and its citizens the following recommendations are given.

1. A drastic increase of Internet penetration is needed, especially in areas outside Yerevan. It can be reached particularly by the establishment of Internet community centers, primarily by expanding the number of schools connected to Internet and at the same time decreasing the cost of Internet services.
2. The implementation of targeted programs by the Ministry of Education in order to improve computer training in education system (from schools to higher education institutions), as well as extensively educate the entire population on Internet usage, E-government services and how to use them. A careful approach to the old-age people is also another issue. Government should also design and implement social program to improve access of disabled groups and senior citizens to computers, broadband services.
3. Retraining government employees for using ICT in their agencies to communicate electronically, to be able to handle all the documentation via computers. Expand the practice of using ICT to provide public services in electronic format in addition to traditional procedures and ensure better access to public information and services.
4. Strengthen the collaboration between government and ICT companies. Private sector can bring valuable input in modernizing government management information systems. Public-private partnerships can be an interesting solution in this area.
5. Establish and enlarge collaboration with countries, which successfully apply ICT in governance in order to acquire their best practices such as India, Korea, Romania
6. Strengthen the links between government and NGO sector working in the field of information technologies, because there is a significant technical and intellectual resource in this sector.

Armenia has already chosen the path of democratic governance. From this perspective the role of the information and communication technologies cannot be underestimated. We believe, that implementation of the above mentioned recommendations can contribute to strengthening democracy and good governance.

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Appendix A Frequency Tables

Table 1: Do you have access to PC?

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	80	100.0	100.0	100.0

Table 2: Do you visit government official websites such as www.gov.am, www.parliament.am and etc.

	Frequency	Percent	Valid Percent	Cumulative Percent
yes	38	47.5	47.5	47.5
no	42	52.5	52.5	52.5
Total	80	100.0	100.0	100.0

Table 3: Please, tell me how many minutes do you refer to above mentioned websites during a week?

	Frequency	Percent	Valid Percent	Cumulative Percent
10	2	2.5	5.3	5.3
15	2	2.5	5.3	10.5
20	3	3.8	7.9	18.4
30	3	3.8	7.9	26.3
60	11	13.8	28.9	55.3
70	2	2.5	5.3	60.5
100	6	7.5	15.8	76.3
120	2	2.5	5.3	81.6
180	4	5.0	10.5	92.1
200	3	3.8	7.9	100.0
System	42	52.5		
Total	80	100.0		

Table 4: Can you please tell me ONE main reason explaining why you refer to those websites.

	Frequency	Percent	Valid Percent	Cumulative Percent
To be updated about legislative acts	9	11.3	23.7	23.7
To get daily news, information	12	15.0	31.6	55.3
To use as a additional source of information for my studies	9	11.3	23.7	78.9
Other	7	8.8	18.4	97.4
Don't know/can't say	1	1.3	2.6	100.0

Total	38	47.5	100.0	
System	42	52.5		
Total	80	100.0		

Table 5: Armenian government websites are of high quality.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly agree	2	2.5	5.6	5.6
Agree	17	21.3	47.2	52.8
Disagree	15	18.8	41.7	94.4
Strongly disagree	2	2.5	5.6	100.0
Don't know/can't say	2	2.5		
System	42	52.5		
Total	44	55.0		
Total	80	100.0		

Mean= 2,12 Median= 2,00 Mode= 2 (1=Strongly agree, 4=Strongly disagree, don't know/can't say excluded)

Table 6: Armenian government websites are user-friendly.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly agree	1	1.3	2.6	2.6
Agree	19	23.8	50.0	52.6
Disagree	18	22.5	47.4	100.0
Total	38	47.5	100.0	
System	42	52.5		
Total	80	100.0		

Mean= 2,14 Median= 2,00 Mode= 2 (1=Strongly agree, 4=Strongly disagree, don't know/can't say excluded)

Table 7: Access to information on government websites helps me better understand government decisions.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly agree	3	3.8	8.1	8.1
Agree	17	21.3	45.9	54.1
Disagree	14	17.5	37.8	91.9
Strongly disagree	3	3.8	8.1	100.0
Total	37	46.3	100.0	
Don't know/can't say	1	1.3		
System	42	52.5		

Total	43	53.8		
Total	80	100.0		

Mean= 2,45 Median= 2,00 Mode= 2 (1=Strongly agree, 4=Strongly disagree, don't know/can't say excluded)

Table 8: Can you please tell me whether you have ever written an electronic letter to your district Member of the Parliament?

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	1	1.3	1.3	1.3
No	79	98.8	98.8	100.0
Total	80	100.0	100.0	

Table 9: Reasons for writing an electronic letter to your district Member of the Parliament.

	Frequency	Percent	Valid Percent	Cumulative Percent
	79	98.8	98.8	98.8
Concerning my thesis	1	1.3	1.3	100.0
Total	80	100.0	100.0	

Table 10: Can you please tell me whether you have ever posted any article on any gov. official's pages on social websites such as Facebook, Twitter?

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	1	1.3	1.3	1.3
No	79	98.8	98.8	100.0
Total	80	100.0	100.0	

Table 11: Reasons for posting any article on any gov. official's pages on social websites.

	Frequency	Percent	Valid Percent	Cumulative Percent
	79	98.8	98.8	98.8
An article about the government-opposition conflict	1	1.3	1.3	100.0
Total	80	100.0	100.0	

Table 12: Access to information on government websites promotes transparency of government decisions.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly agree	9	11.3	12.0	12.0
Agree	31	38.8	41.3	53.3
Disagree	29	36.3	38.7	92.0
Strongly disagree	6	7.5	8.0	100.0
Total	75	93.8	100.0	
Don't know/can't say	5	6.3		
Total	80	100.0		

Mean= 2,43 Median= 2,00 Mode= 2 (1=Strongly agree, 4=Strongly disagree, don't know/can't say excluded)

Table 13: Access to information on government websites increases government accountability to citizens.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly agree	10	12.5	13.0	13.0
Agree	42	52.5	54.5	67.5
Disagree	15	18.8	19.5	87.0
Strongly disagree	10	12.5	13.0	100.0
Total	77	96.3	100.0	
Don't know/can't say	3	3.8		
Total	80	100.0		

Mean= 2,32 Median= 2,00 Mode= 2 (1=Strongly agree, 4=Strongly disagree, don't know/can't say excluded)

Table 14: Government should better educate people how to use their websites.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly agree	28	35.0	37.8	37.8
Agree	24	30.0	32.4	70.3

Disagree	19	23.8	25.7	95.9
Strongly disagree	3	3.8	4.1	100.0
Total	74	92.5	100.0	
Don't know/can't say	6	7.5		
Total	80	100.0		

Mean= 1,96 Median= 2,00 Mode= 1 (1=Strongly agree, 4=Strongly disagree, don't know/can't say excluded)

Table 15: Government agencies should more actively engage in social networks such as Facebook, LinkedIn.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly agree	28	35.0	40.0	40.0
Agree	35	43.8	50.0	90.0
Disagree	4	5.0	5.7	95.7
Strongly disagree	3	3.8	4.3	100.0
Total	70	87.5	100.0	
Don't know/can't say	10	12.5		
Total	80	100.0		

Mean= 1,74 Median= 2,00 Mode= 2 (1=Strongly agree, 4=Strongly disagree, don't know/can't say excluded)

Table 16: Government high-ranked officials should more actively engage in social networks such as Facebook, LinkedIn.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly agree	28	35.0	39.4	39.4
Agree	27	33.8	38.0	77.5
Disagree	16	20.0	22.5	100.0
Total	71	88.8	100.0	
Don't know/can't say	9	11.3		
Total	80	100.0		

Mean= 1,83 Median= 2,00 Mode= 1 (1=Strongly agree, 4=Strongly disagree, don't know/can't say excluded)

Table 17: The provision of government information on the website gives a greater power to citizens.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly agree	15	18.8	20.5	20.5
Agree	50	62.5	68.5	89.0
Disagree	8	10.0	11.0	100.0
Total	73	91.3	100.0	
don't know/can't say	7	8.8		
Total	80	100.0		
<i>Mean= 1,90 Median= 2,00 Mode= 2 (1=Strongly agree, 4=Strongly disagree, don't know/can't say excluded)</i>				

Table 18: I believe that writing an electronic letter to a government member will make changes in government decision-making process.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly agree	7	8.8	10.0	10.0
Agree	19	23.8	27.1	37.1
Disagree	27	33.8	38.6	75.7
Strongly disagree	17	21.3	24.3	100.0
Total	70	87.5	100.0	
Don't know/can't say	10	12.5		
Total	80	100.0		
<i>Mean= 2,77 Median= 3,00 Mode= 3 (1=Strongly agree, 4=Strongly disagree, don't know/can't say excluded)</i>				

Table 19: Imagine for a moment that government services are provided also via Internet. How likely is that you would choose using government websites instead of visiting appropriate government offices?

	Frequency	Percent	Valid Percent	Cumulative Percent
Very likely	34	42.5	44.7	44.7
Somewhat likely	36	45.0	47.4	92.1
Somewhat unlikely	6	7.5	7.9	100.0
Total	76	95.0	100.0	
Don't know/can't say	4	5.0		
Total	80	100.0		

Table 20: Imagine for a moment that you are given an opportunity to take part in adopting gov. decisions via electronic forum and gov. websites. How likely is that you would participate in these forums?

	Frequency	Percent	Valid Percent	Cumulative Percent
Very likely	38	47.5	50.0	50.0
Somewhat likely	31	38.8	40.8	90.8
Somewhat unlikely	7	8.8	9.2	100.0
Total	76	95.0	100.0	
Don't know/can't say	4	5.0		
Total	80	100.0		

Appendix B Questionnaire for Students

1. Do you have access to PC?

Yes

No

2. Do you visit government official websites such as www.gov.am, www.parliament.am, www.president.am, or Ministry websites?

Yes

No (*Go to question 6.*)

3. Please tell me how many minutes, on average, do you refer to above mentioned websites during a typical week?

4. Can you please tell me the ONE main reason explaining why you refer to government official websites?

5. I am going to ask your opinion on some statements. Using your personal opinion, please tell me if you strongly agree, agree, disagree, or strongly disagree. (*Repeat the four choices after you read the first statement.*)

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know/ can't say
Armenian government web-sites are of high quality.					
Armenian government websites are user-friendly.					
Access to information on government websites helps me better understand government decisions.					

6. Can you please tell me whether you have ever written an electronic letter to your district Member of the Parliament?

 Yes (*please give details:* _____)

 No _____)

7. Can you please tell me whether you have ever posted any article on any government officials' pages on social websites such as Facebook, Twitter, LinkedIn and etc.?

 Yes (*please give details:* _____)

 No _____)

8. I am going to ask your opinion on some statements. Using your personal opinion, please tell me if you strongly agree, agree, disagree, or strongly disagree. (***Repeat the four choices after you read the first statement.***)

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know/ can't say
Access to information on government websites promotes transparency of government decisions.					
Access to information on government websites increases government accountability to citizens.					
Government should better educate people how to use their websites.					
Government agencies should more actively engage in social networks, such as Facebook, LinkedIn, Twitter, etc.					
Government high-ranked officials should more actively engage in social networks, such as Facebook, LinkedIn, Twitter, etc.					

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know/ can't say
The provision of government information on the web site gives a greater power to citizens as they will have access to data that was known and used by government agencies.					

9. Imagine for a moment that some government services are provided also via Internet. How likely is that you would choose using government websites to get those services instead of visiting appropriate government offices? Would you say, it is very likely, somewhat likely, somewhat not likely, or not likely at all? *(If unclear, give following examples: paying taxes, obtaining permits or certificates, etc.)*

very likely
 somewhat likely
 somewhat not likely
 not likely at all
 don't know/can't say

10. Imagine for a moment that you are given an opportunity to take part in adopting government decisions via electronic forums, blogs and government websites. How likely it is that you would participate in these forums by suggesting your ideas? Would you say, it is very likely, somewhat likely, somewhat not likely or not likely at all?

very likely
 somewhat likely
 somewhat not likely
 not likely at all
 don't know/can't say

Appendix C Questionnaire for Experts

1. What can you tell about the relation between ICT and good governance in Armenia?

Ի՞նչ կարող եք ասել տեղեկատվական և հաղորդակցական տեխնոլոգիաների /SՀS/ և արդյունավետ կառավարման միջև կապի մասին:

2. What objectives does ICT have in your company? Is it just a source of information or you expect citizens to participate in a decision-making process of your company via forums and blogs?

Ինչ՞ կիրառում ունեն SՀS-ները ձեր նախարարությունում/ կազմակերպությունում:

Դրանք միայն տեղեկատվության աղբյուր են, թե Դուք ակնկալում եք, որ քաղաքացիները կմասնակցեն Ձեր նախարարության/ կազմակերպության որոշումների կայացման գործընթացին ֆորումների և բլոգերի օգնությամբ:

3. In your opinion how the quality of public services can be improved via ICT?

Ի՞նչ եք կարծում, Ձեր նախարարության/կազմակերպության հանրային ծառայումների որակը ինչպես կարելի է բարելավել SՀS-ների միջոցով:

4. Do you think that an electronic letter to a government member will be handled the same way as a conventional written letter? Is this an effective way of communication with government? Very effective? Not effective at all? Why?

Ի՞նչ եք կարծում, եթե քաղաքացին էլեկտրոնային նամակ գրի ՀՀ կառավարության անդամին, արդյո՞ք այդ նամակին ընթացք կտրվի նույնպես, ինչպես սովորական դիմումին: Սրդյո՞ք դա հաղորդակցման արդյունավետ միջոց է կառավարության հետ: Շատ արդյունավետ, ոչ արդյունավետ: Ինչու՞ :

5. What is the future of ICT in Armenian government system?

ՀՀ-ում ինչպիսի՞ն է SՀS-ների ապագա դերը կառավարման գործընթացում:

6. How likely is that citizens in the nearest future will choose using government websites to get public services like paying taxes, obtaining permits or certificates instead of visiting in person appropriate government offices?

Որքանով է հավանական, որ քաղաքացիները մոտ ապագայում նախընտրեն օգտվել պաշտոնական վեբ-կայքերից որոշ հանրային ծառայություններ՝ օրինակ, հարկեր վճարելու, որևէ թուղթվություն կամ հավաստագիր ստանալու համար, համապատասխան պետական հիմնարկ/գերատեսչություն այցելելու փոխարեն:

7. What can be done to promote the idea of e-governance among the citizens as a part of good governance?

Ի՞նչ կարող է արվել Ձեր կողմից քաղաքացիների շրջանում էլեկտրոնային կառավարման գաղափարը խրախուսելու և կառավարման արդյունավետությունը բարձրացնելու համար:

8. Is ICT a decisive step in the process of the democratization of public information and in the citizen-government-citizen interaction?

Արդյոք SՆՏ-երի կիրառումը որոշիչ քայլ է հանդիսանում հանրային տեղեկատվության ժողովրդավարացման և քաղաքացի-կառավարություն-քաղաքացի շփման գործընթացում:

9. What do you think, will the citizens' blogs published on government sites or social networks be considered in subsequent decision-making in the nearest future?

Դուք գրո՞ւմ եք բլոգներ սոցիալական ցանցերում, օրինակ Facebook, Twitter, LinkedIn.

10. How the ICT technologies are used in government agencies and local governments?

Ինչպե՞ս են SՆՏ-ները կիրառվում պետական և տեղական ինքնակառավարման մարմինների աշխատանքներում: